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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,564	08/15/2003	Satish Gadde	2003P11329US	6624

7590 11/01/2004

Siemens Corporation  
Intellectual Property Department  
170 Wood Avenue South  
Iselin, NJ 08830

EXAMINER

KIM, TAE JUN

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/644,564	Applicant(s) GADDE ET AL.	
	Examiner Ted Kim	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "13" in Figure 3 – only "12" is illustrated in Fig. 3 – which is a clear error as "13" is supposed to be associated with injectors "16". Also interface "38" (see page 5, lines 28+) is not illustrated. Corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: C-stage (see Fig. 5) is not discussed in the specification or with respect to the other drawings. Corrected drawings and amendment to the specification are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:  

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claims 15-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention. Applicant claims the interface (see claim 15) is reduced between fuel and unfueled regions. However, applicant has not provided any baseline configuration in the specification (see e.g. page 2, lines 5-13 and page 3, lines 3-11) for which the interface is reduced. It is not clear what type of prior art configuration applicant is comparing his invention with such that the claimed reduction can occur.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 4, 6-9, 11-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Munro (5,884,483). Munro teaches fuel system for a turbine engine, comprising: a first premix injector assembly comprising at least four injectors 20, wherein at least first and second injectors of the at least four injectors of the first premix injector assembly 20 are positioned adjacent each other in the turbine engine and at least third and fourth injectors of the at least four injectors of the first premix injector assembly are positioned adjacent each other in the turbine engine; a second premix injector assembly 22 comprising at least two injectors; wherein at least one injector forming the second premix injector assembly is positioned between the first injector and the fourth injector of the

first premix injector assembly and at least one injector forming the second premix injector assembly is positioned between the second injector and the third injector of the first premix injector assembly; and wherein the fuel system is capable of emitting fuel into the turbine engine through the first premix injector assembly without simultaneously emitting fuel into the turbine engine through the second premix injector assembly by use of valves 16; the second premix injector assembly comprises at least four injectors, wherein at least first and second injectors of the at least four injectors are positioned adjacent each other in the turbine engine and at least third and fourth injectors of the at least four injectors are positioned adjacent each other in the turbine engine, wherein the first and second injectors forming a portion of the second premix injector assembly 22 is positioned between the first injector and the fourth injector of the first premix injector assembly and the third and fourth injectors forming a portion of the second premix injector assembly are positioned between the second injector and the third injector of the first premix injector assembly 20. The disclosure specifically states that the “injector means” or “injector” or “burner” is be understood “any of the presently known means of introducing fuel or fuel/air mixture into a continuous burn combustion chamber” (see col. 1, lines 24-29). As is well known in the art, premixing nozzles are one of the types of injectors that are well known in the art and covered by the disclosure. Note that the nozzles 45 degrees spaced from each other can be read on the assembly. A method for reducing a size of an interface between fueled and unfueled regions in a fuel system of a turbine engine operating in fuel staging condition, comprising: supplying fuel to a first

Art Unit: 3746

premix injector assembly of a fuel system comprising a first premix injector assembly and a second premix injector assembly, the first premix injector assembly comprising at least four injectors positioned adjacent each other in the turbine engine and the second premix injector assembly comprising at least two injectors positioned adjacent each other in the turbine engine and adjacent to the at least two injectors of the first premix injector assembly; and emitting fuel from the at least four injectors of the first premix injector assembly without simultaneously ejecting fuel from the second premix injector assembly.

7. Claims 1, 3, 4, 6, 7, 15, 16, are rejected under 35 U.S.C. 102(b) as being anticipated by Iwai et al (5,339,635). Iwai et al teach fuel system for a turbine engine (see Fig. 8), comprising: a first premix injector assembly comprising at least four injectors 2 wherein at least first and second injectors of the at least four injectors of the first premix injector assembly 2 are positioned adjacent each other in the turbine engine and at least third and fourth injectors of the at least four injectors of the first premix injector assembly 2 are positioned adjacent each other in the turbine engine; a second premix injector assembly comprising at least two injectors 1; wherein at least one injector 1 forming the second premix injector assembly is positioned between the first injector and the fourth injector of the first premix injector assembly and at least one injector forming the second premix injector assembly is positioned between the second injector and the third injector of the first premix injector assembly; and wherein the fuel system is capable of emitting fuel into the turbine engine through the first premix injector assembly 2 without simultaneously emitting fuel into the turbine engine through the second premix

injector assembly 1 (col. 6, lines 1+); the second premix injector assembly 1 comprises at least four injectors. A method for reducing a size of an interface between fueled and unfueled regions in a fuel system of a turbine engine operating in fuel staging condition, comprising: supplying fuel to a first premix injector assembly of a fuel system comprising a first premix injector assembly and a second premix injector assembly, the first premix injector assembly comprising at least four injectors positioned adjacent each other in the turbine engine and the second premix injector assembly comprising at least two injectors positioned adjacent each other in the turbine engine and adjacent to the at least two injectors of the first premix injector assembly; and emitting fuel from the at least four injectors of the first premix injector assembly without simultaneously ejecting fuel from the second premix injector assembly.

8. Claims 1, 3-6, 15, 16 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-196941. JP '941 teaches a fuel system for a turbine engine, comprising: a first premix injector assembly comprising at least four injectors (see Fig. 3b), wherein at least first and second injectors of the at least four injectors 9a of the first premix injector assembly are positioned adjacent each other in the turbine engine and at least third and fourth injectors of the at least four injectors of the first premix injector assembly 9a are positioned adjacent each other in the turbine engine; a second premix injector assembly (see white injectors in Fig. 3b) comprising at least two injectors; wherein at least one injector forming the second premix injector assembly is positioned between the first injector and the fourth injector of the first premix injector assembly and at least one

injector forming the second premix injector assembly is positioned between the second injector and the third injector of the first premix injector assembly; and wherein the fuel system is capable of emitting fuel into the turbine engine through the first premix injector assembly without simultaneously emitting fuel into the turbine engine through the second premix injector assembly; the second premix injector assembly comprises at least four injectors (each nozzle has a valve 10), wherein at least first and second injectors of the at least four injectors are positioned adjacent each other in the turbine engine and at least third and fourth injectors of the at least four injectors are positioned adjacent each other in the turbine engine, wherein the first and second injectors forming a portion of the second premix injector assembly is positioned between the first injector and the fourth injector of the first premix injector assembly and the third and fourth injectors forming a portion of the second premix injector assembly are positioned between the second injector and the third injector of the first premix injector assembly.

*Claim Rejections - 35 USC § 103*

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-17 rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-196941 in view of WO 98/25084 and Munro (5,884,483). JP '941 teaches various



Art Unit: 3746

aspects of the claimed invention including a pilot burner 7a but teaches using 6 premixing nozzles and not 8. WO 98/25084 teaches using 8 premixing nozzles 2, 3 which are staged. It would have been obvious to one of ordinary skill in the art to apply the staging of JP '941 to a premixing combustor with more burners. In such a scenario, in keeping with JP '941 burner distribution pattern, all the nozzles would be distributed in pairs. Optionally, Munro is cited as a teaching reference which shows that it is old and well known to distribute the premixers around the circumference in pairs as being equivalent to other patterns used for staging (col. 1, lines 16-29; col. 4, lines 6-17). It would have been obvious to one of ordinary skill in the art to provide the burners in pairs, as taught by Munro, as a well known or equivalent pattern configuration of fuel injectors employed in the art for staging the fuel.

### *Contact Information*

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 703-308-2631 until approximately November 22 at which point the telephone number will be 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 703-872-9306 for Regular faxes and 703-872-9306 for After Final faxes.

Art Unit: 3746

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler, can be reached on 703-306-2772.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>



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